US009297232B2

(12) United States Patent
Scott et al.

(10) Patent No.: US 9,297,232 B2
(45) Date of Patent: *Mar. 29, 2016

(54) **RECLOSABLE MULTI ZONE ISOLATION TOOL AND METHOD FOR USE THEREOF**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 218 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/972,998**

(22) Filed: **Aug. 22, 2013**

(65) **Prior Publication Data**

US 2014/0020912 A1 Jan. 23, 2014

Related U.S. Application Data

(63) Continuation of application No. 13/878,599, filed as application No. PCT/US2012/047125 on Jul. 18, 2012, now Pat. No. 8,757,275.

(51) **Int. Cl.**

E21B 33/12	(2006.01)
E21B 34/00	(2006.01)
E21B 34/10	(2006.01)
E21B 33/127	(2006.01)

(52) **U.S. Cl.**

CPC ***E21B 34/10*** (2013.01); ***E21B 33/127*** (2013.01); ***E21B 34/102*** (2013.01)

(58) **Field of Classification Search**

CPC E21B 33/127; E21B 34/10; E21B 34/12; E21B 34/14; E21B 34/102; E21B 34/105

USPC 166/381, 387, 332.1, 321, 187

See application file for complete search history.

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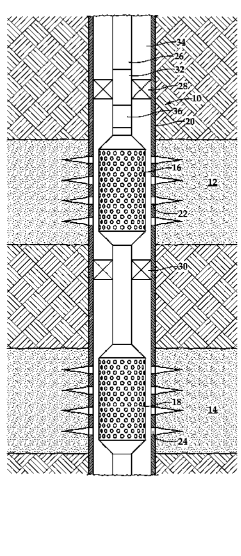
(57) **ABSTRACT**

An apparatus for isolating a first zone from a second zone in a subterranean wellbore. The apparatus includes an outer tubular and an inner tubular disposed within the outer tubular forming an annular flow path therebetween that is in fluid communication with the first zone. The inner tubular defines a central flow path that is in fluid communication with the second zone. A sleeve having at least one seal is positioned in the annular flow path and is axially movable relative to the inner and outer tubulars between a closed position wherein the seal engages the inner tubular and an open position wherein the seal engages the outer tubular. A mandrel is slidably disposed within the inner tubular and is coupled to the sleeve. The mandrel is operable to shift the sleeve between the open position and the closed position responsive to changes in pressure within the central flow path.

17 Claims, 7 Drawing Sheets



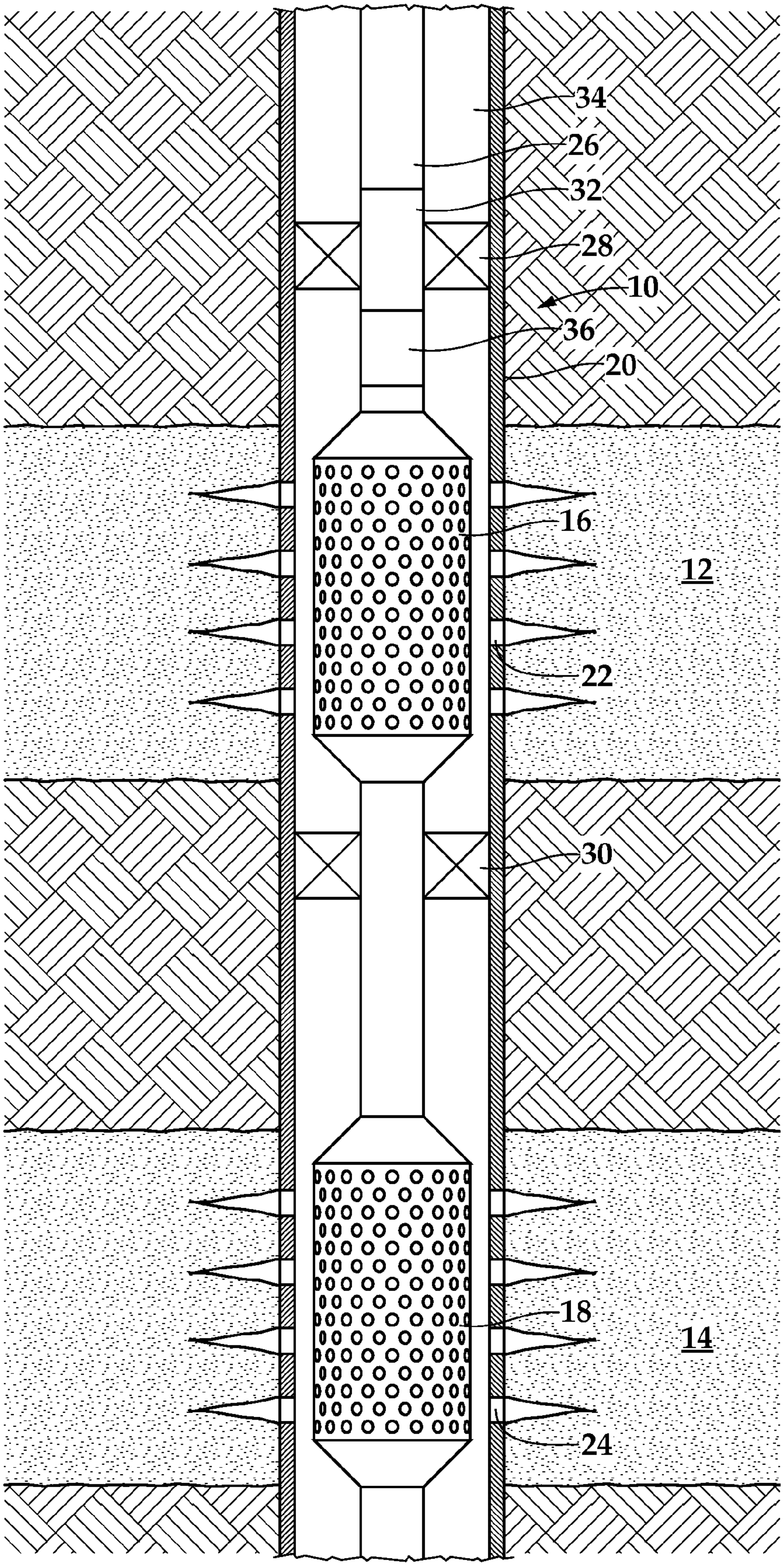


Fig.1

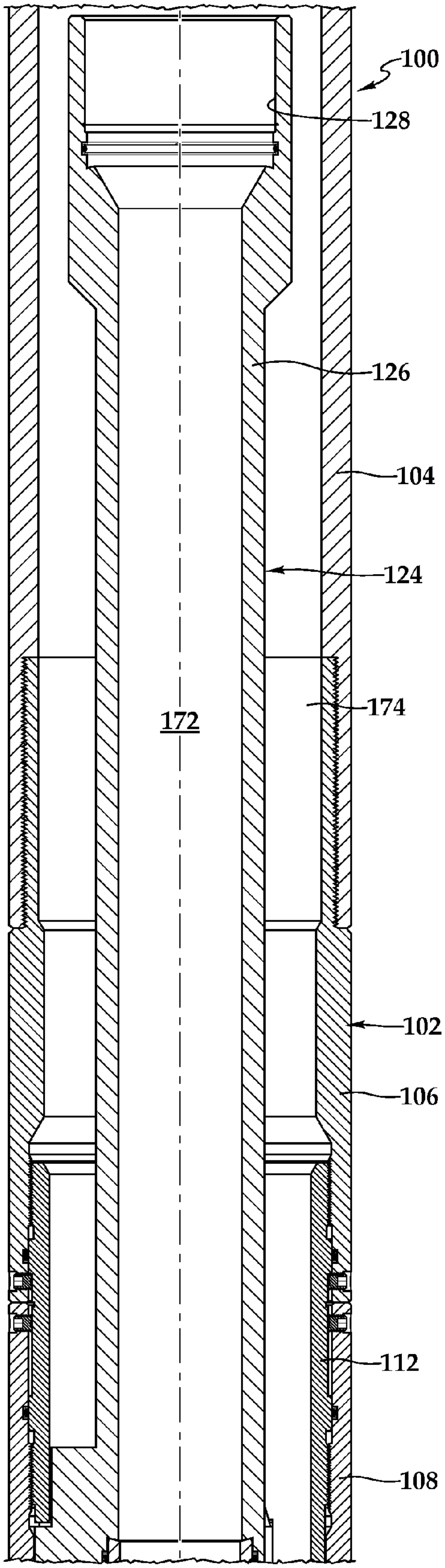

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Fig.2A

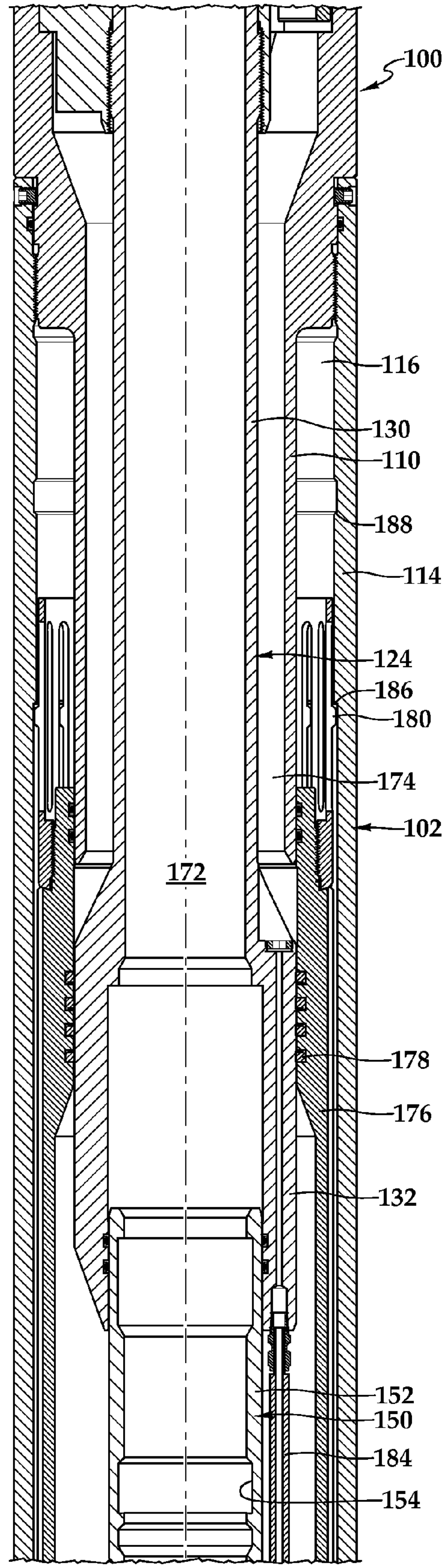
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Fig.2B

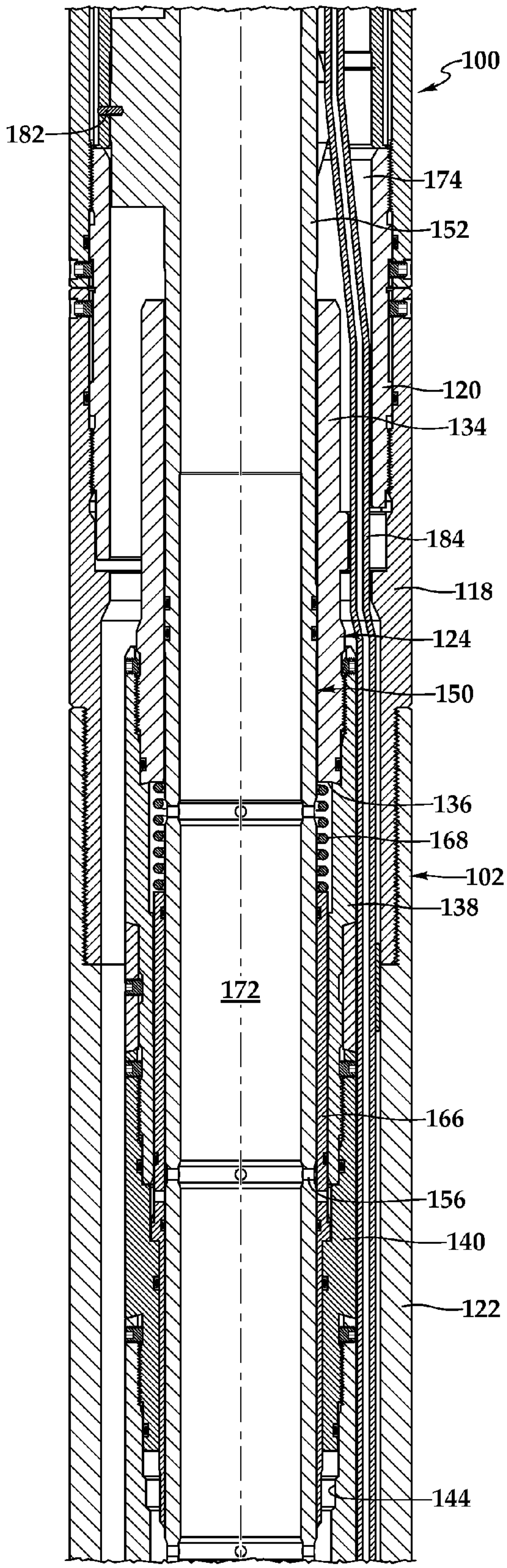
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Fig.2C

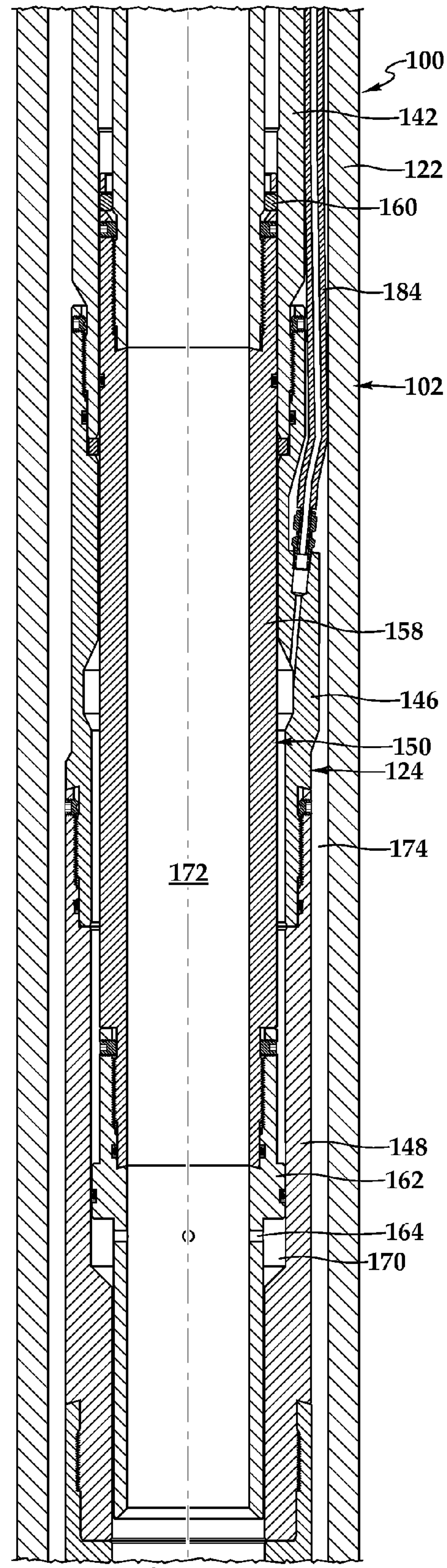
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Fig.2D

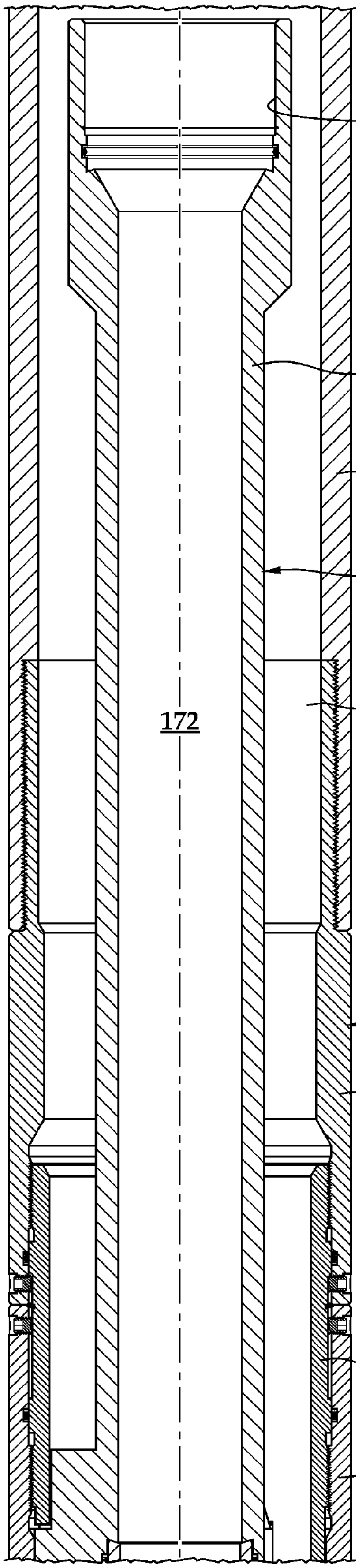
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Fig.3A

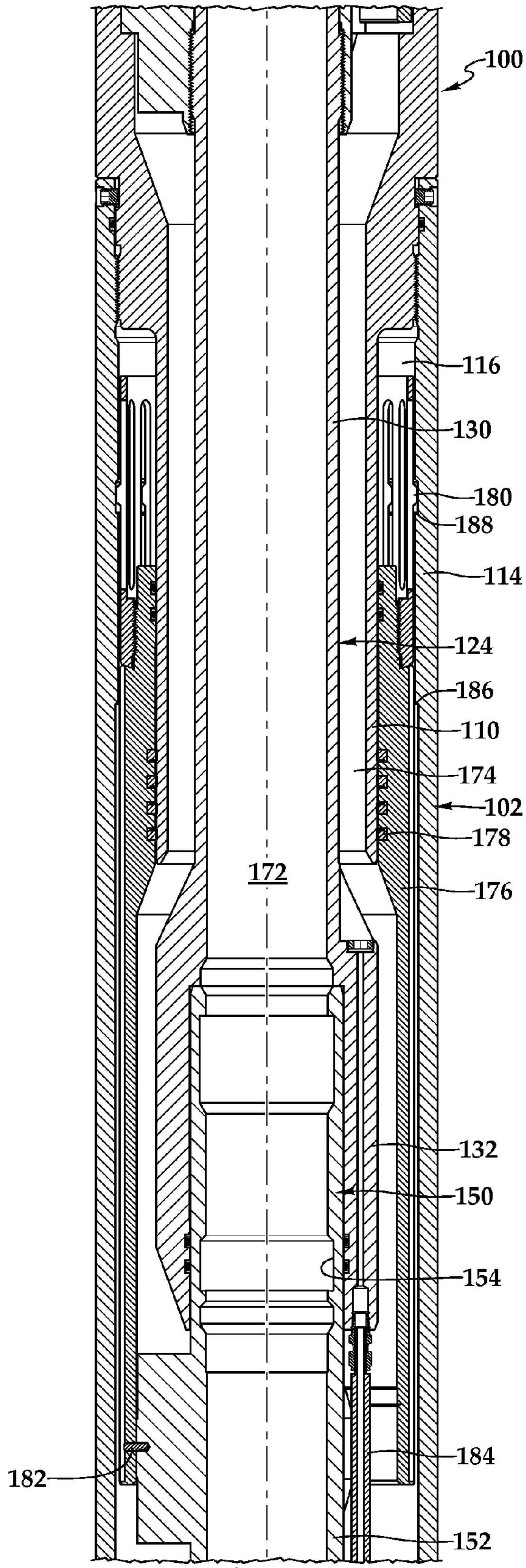
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Fig.3B

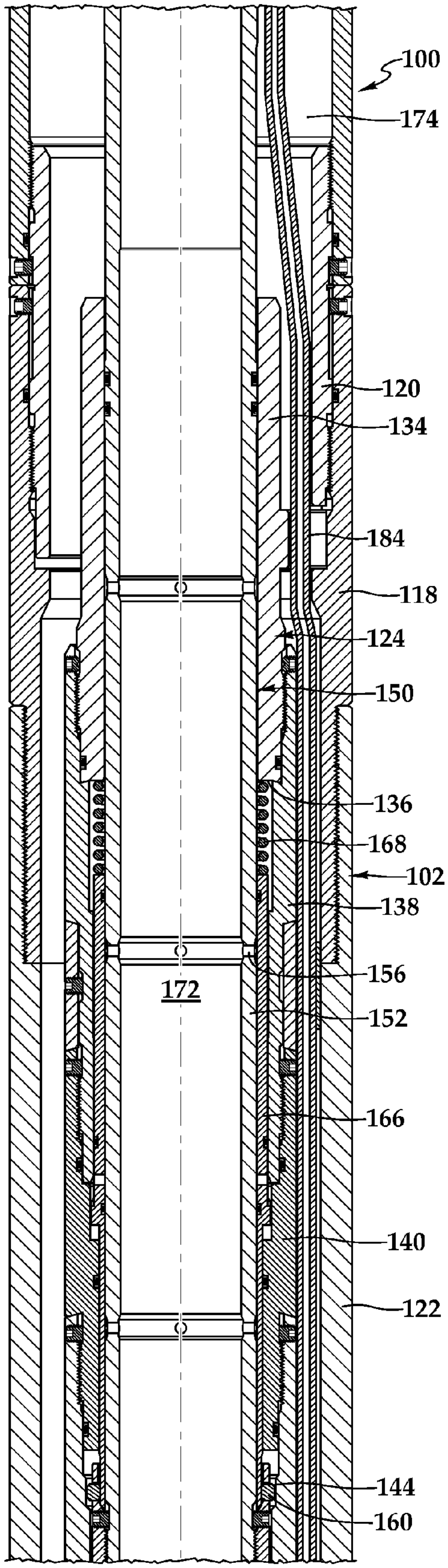
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Fig.3C

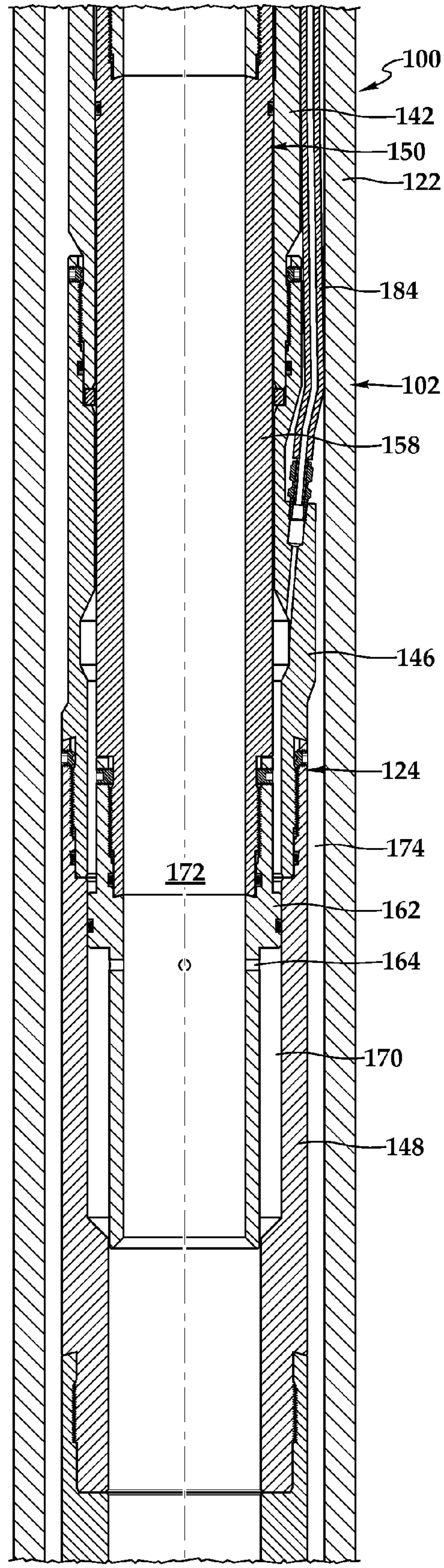
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Fig.3D

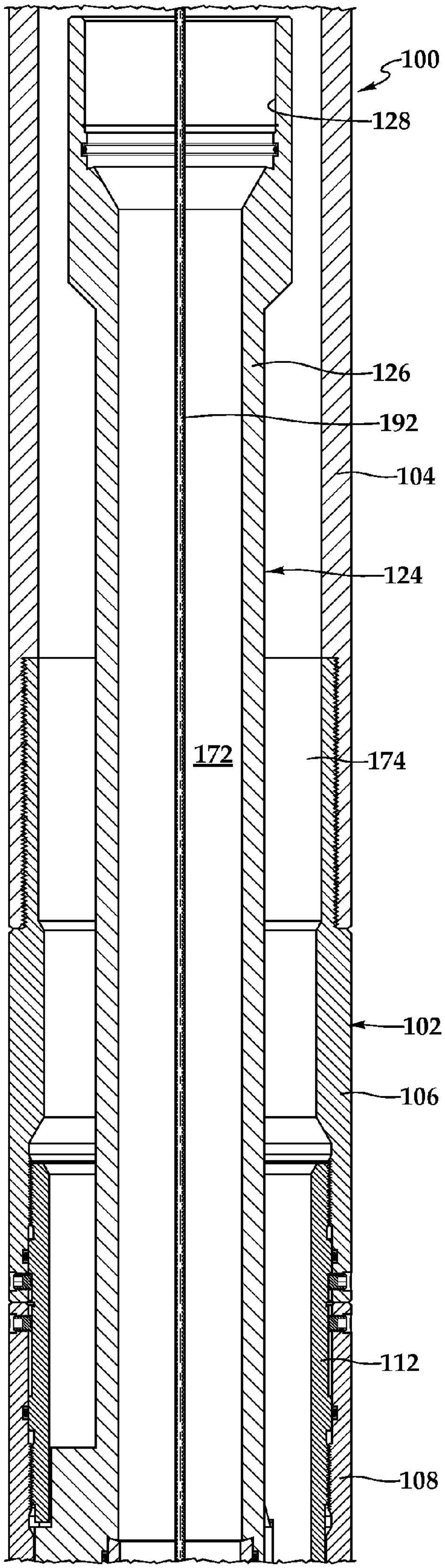
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Fig.4A

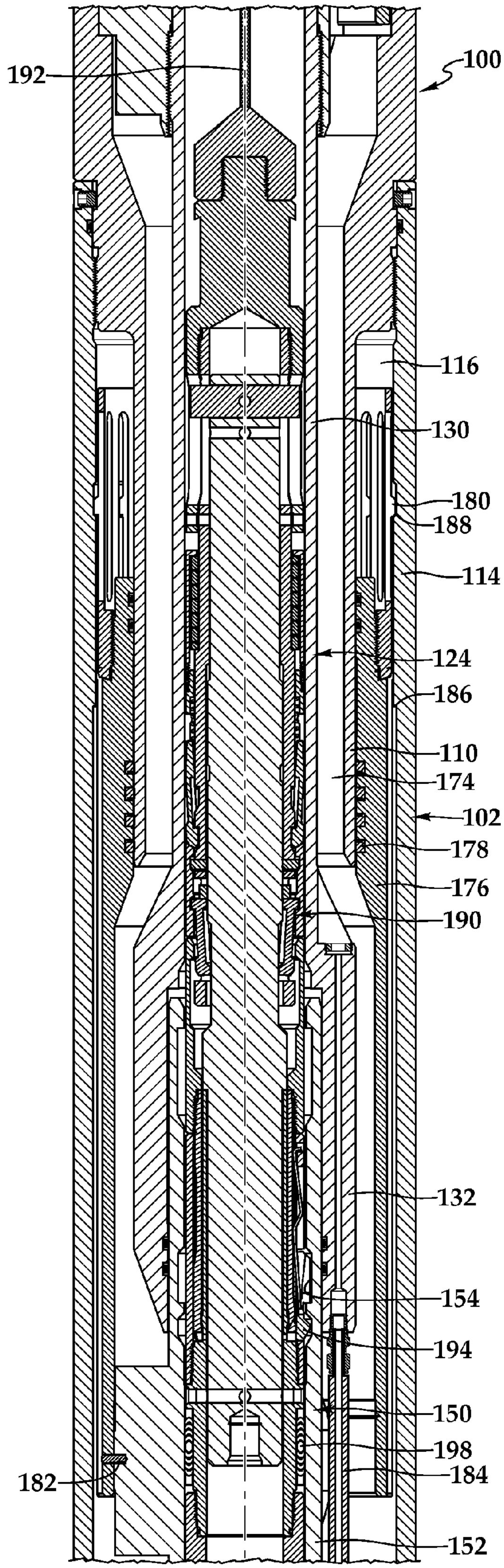
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Fig.4B

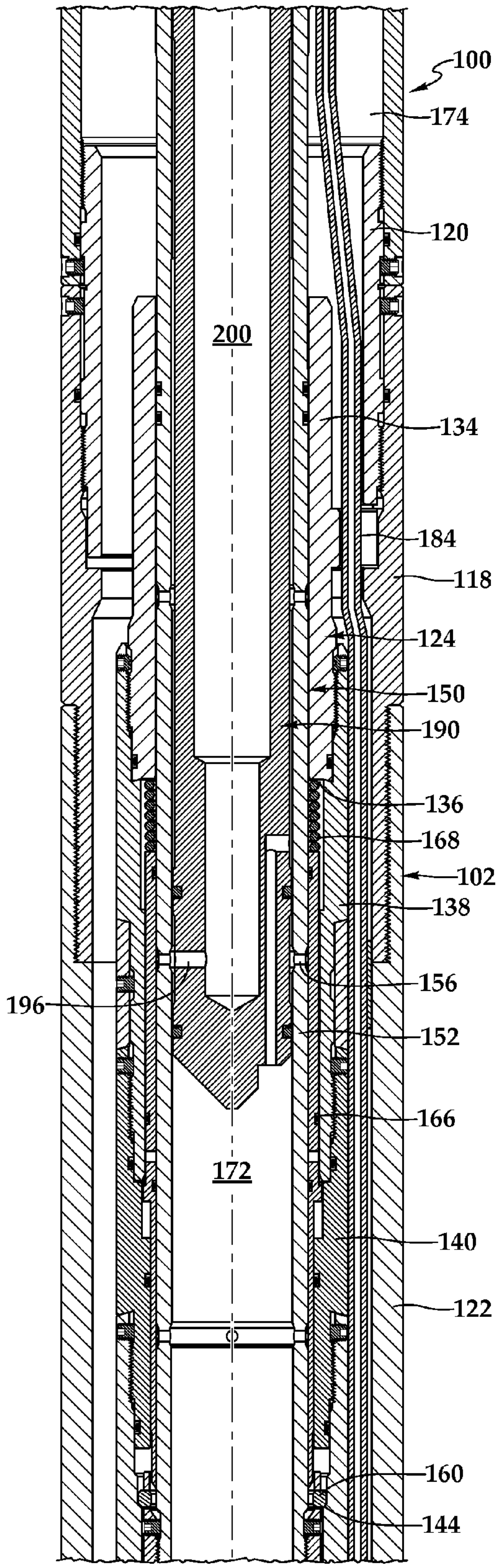
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Fig.4C

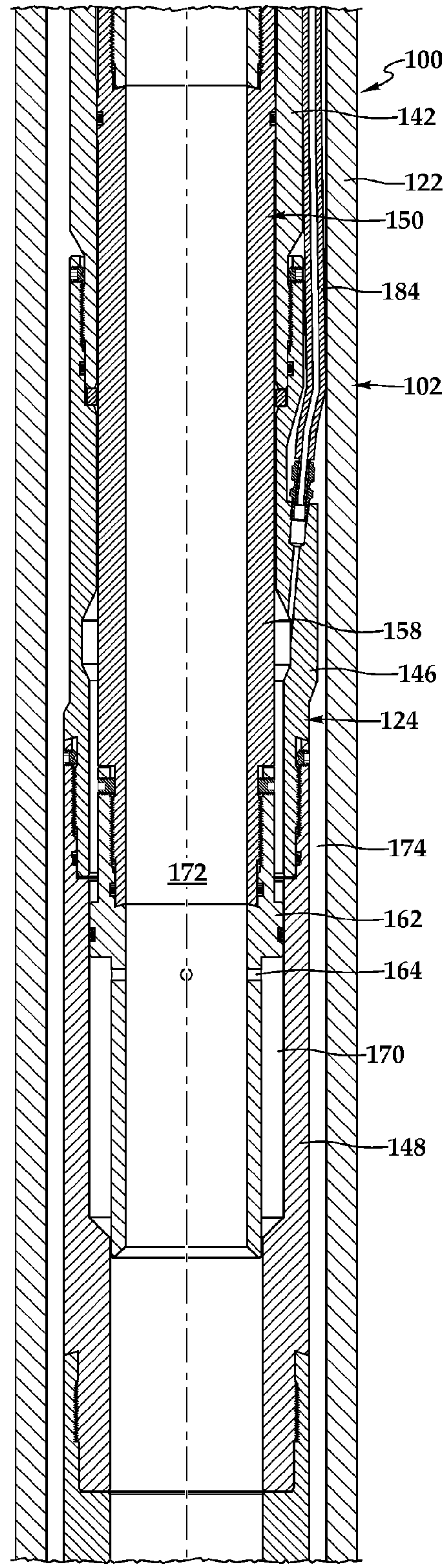
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Fig.4D

RECLOSABLE MULTI ZONE ISOLATION TOOL AND METHOD FOR USE THEREOF

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application is a continuation of co-pending application Ser. No. 13/878,599, filed Apr. 10, 2013, which is a United States National Stage application of International Application no. PCT/US2012/047125, filed Jul. 18, 2012. The entire disclosures of these prior applications are incorporated herein by this reference.

TECHNICAL FIELD OF THE INVENTION

This invention relates, in general, to equipment utilized in conjunction with operations performed in subterranean wells and, in particular, to a reclosable multi zone isolation tool for isolating an upper zone from a lower zone in a subterranean wellbore and a method for use thereof

BACKGROUND OF THE INVENTION

Without limiting the scope of the present invention, its background will be described with reference to producing multiple hydrocarbon bearing subterranean zones in a well, as an example. It is common to encounter hydrocarbon wells that traverse more than one separate subterranean hydrocarbon bearing zone. In such wells, the separate subterranean hydrocarbon bearing zones may have similar or different characteristics. For example, the separate subterranean hydrocarbon bearing zones may have significantly different formation pressures. Even with the different pressures regimes, it may nonetheless be desirable to complete each of the multiple zones prior to producing the well. In such cases, it may be desirable to isolate certain of the zones from other zones after completion.

For example, when multiple productive zones that have significantly different formation pressures are completed in a single well, hydrocarbons from a high pressure zone may migrate to a lower pressure zone during production. It has been found, however, that this migration of hydrocarbons from one zone to another may decrease the ultimate recovery from the well. One way to overcome this fluid loss from a high pressure zone into a lower pressure zone during production and to maximize the ultimate recovery from the well is to initially produce only the high pressure zone and delay production from the lower pressure zone. Once the formation pressure of the high pressure zone has decreased to that of the lower pressure zone, the two zones can be produced together without any loss of reserves. It has been found, however, that from an economic perspective, delaying production from the lower pressure zone while only producing from the high pressure zone may be undesirable.

A need has therefore arisen for an apparatus that provides for the isolation of separate zones traversed by a wellbore. A need has also arisen for such an apparatus that does not required delayed production from a lower pressure zone during production from a high pressure zone. Further, a need has arisen for such an apparatus that does not allow fluid loss from a high pressure zone into a lower pressure zone if both zones are produced at the same time.

SUMMARY OF THE INVENTION

The present invention disclosed herein comprises an apparatus and method that provides for the isolation of separate

zones traversed by a wellbore. In addition, the apparatus and method of the present invention do not required delayed production from a lower pressure zone during production from a high pressure zone. Further, the apparatus and method of the present invention enable simultaneous production from multiple zones without fluid loss from a high pressure zone into a lower pressure zone.

In one aspect, the present invention is directed to an apparatus for isolating a first zone from a second zone in a subterranean wellbore. The apparatus includes an outer tubular and an inner tubular disposed within the outer tubular forming a substantially annular flow path therebetween that is in fluid communication with the first zone. The inner tubular defines a central flow path therein that is in fluid communication with the second zone. A sleeve having at least one seal disposed on an inner surface thereof is positioned in the annular flow path to control fluid flow therethrough. The sleeve is axially movable relative to the outer tubular and the inner tubular between a closed position wherein the seal engages an outer surface of the inner tubular and an open position wherein the seal engages an outer surface of the outer tubular. A mandrel is slidably disposed within the inner tubular and coupled to the sleeve. The mandrel is operable to shift the sleeve between the open position and the closed position responsive to changes in pressure within the central flow path.

In one embodiment, a collet assembly is coupled to the sleeve to selectively prevent shifting of the sleeve relative to the outer tubular when the sleeve is in the open position and when the sleeve is in the closed position. In another embodiment, the sleeve has a plurality of seals disposed on the inner surface thereof such that the seals engage the outer surface of the inner tubular in the closed position and the outer surface of the outer tubular in the open position. In some embodiments, the outer tubular includes an extension that forms a substantially annular pocket such that the at least one seal engages the outer surface of the extension in the open position.

In certain embodiments, the mandrel forms at least a portion of the inner tubular. In one embodiment, the mandrel and the inner tubular define an actuation chamber operable to receive pressure from within the central flow path to bias the mandrel in a first direction relative to the inner tubular and shift the sleeve from the closed position to the open position. In another embodiment, an equalization pathway is disposed within the annular flow path to selectively prevent operation of the sleeve from the closed position to the open position.

In some embodiments, a lock assembly is positioned between the mandrel and the inner tubular that selectively prevents movement of the mandrel in the second direction relative to the inner tubular when the sleeve is in the open position. In these embodiments, the lock assembly may include a spring operated lug support and at least one lug such that the lug support props the lug radially outwardly to create interference with the inner tubular. Also, in these embodiments, the mandrel may include at least one reclosing port operable to receive pressure from within the central flow path, when the sleeve is in the open position, to release the lock assembly and to bias the mandrel in the second direction relative to the inner tubular, thereby shifting the sleeve from the open position to the closed position.

In another aspect, the present invention is directed to an apparatus for isolating a first zone from a second zone in a subterranean wellbore. The apparatus includes an outer tubular and an inner tubular disposed within the outer tubular forming a substantially annular flow path therebetween that is in fluid communication with the first zone. The inner tubular defines a central flow path therein that is in fluid communication with the second zone. The outer tubular includes an extension that forms a substantially annular pocket. A sleeve having at least one seal disposed on an inner surface thereof is positioned in the annular flow path to control fluid flow therethrough. The sleeve is axially movable relative to the outer tubular and the inner tubular between a closed position wherein the seal engages an outer surface of the inner tubular and an open position wherein the seal engages an outer surface of the extension of the outer tubular. A mandrel is slidably disposed within the inner tubular and is coupled to the sleeve. The mandrel is operable to shift the sleeve between the open position and the closed position responsive to changes in pressure within the central flow path. The mandrel and the inner tubular define an actuation chamber operable to receive pressure from within the central flow path to bias the mandrel in a first direction relative to the inner tubular and shift the sleeve from the closed position to the open position. The mandrel includes at least one reclosing port operable to receive pressure from within the central flow path when the sleeve is in the open position to bias the mandrel in a second direction relative to the inner tubular and shift the sleeve from the open position to the closed position.

In a further aspect, the present invention is directed to a method for isolating a first zone from a second zone in a subterranean wellbore. The method includes disposing a multi zone isolation tool within the wellbore in a closed position, the tool including an inner tubular defining a central flow path and an outer tubular defining an annular flow path with the inner tubular, the annular flow path in fluid communication with the first zone, the central flow path in fluid communication with the second zone; maintaining the tool in the closed position while treating the second zone by equalizing pressure in the central flow path and the annular flow path; operably coupling a tubing string with the inner tubular; varying the pressure in the central flow path; biasing a mandrel slidably disposed within the inner tubular in a first direction; shifting a sleeve having at least one seal disposed on an inner surface thereof and coupled to the mandrel from the closed position wherein the seal engages an outer surface of the inner tubular to an open position wherein the seal engages an outer surface of the outer tubular; aligning a fluid diverter with at least one reclosing port of the mandrel; varying the pressure in the central flow path; biasing the mandrel in a second direction; and shifting the sleeve from the open position to the closed position.

The method may also include selectively preventing shifting of the sleeve when the sleeve is in the open position and when the sleeve is in the closed position with a collet assembly coupled to the sleeve, selectively preventing movement of the mandrel in the second direction when the sleeve is in the open position with a lock assembly positioned between the mandrel and the inner tubular, propping the lug radially outwardly with a spring operated lug support to create interference with the inner tubular, releasing the lock assembly and/or pressurizing an actuation chamber disposed between the mandrel and the inner tubular.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the features and advantages of the present invention, reference is now made to the detailed description of the invention along with the accompanying figures in which corresponding numerals in the different figures refer to corresponding parts and in which:

FIG. **1** is a schematic illustration of a completion system including a multi zone isolation tool of the present invention;

FIGS. **2**A-**2**D are cross sectional views of successive axial sections of a multi zone isolation tool of the present invention in the closed position;

FIGS. **3**A-**3**D are cross sectional views of successive axial sections of a multi zone isolation tool of the present invention in the open position; and

FIGS. **4**A-**4**D are cross sectional views of successive axial sections of a multi zone isolation tool of the present invention in the open position with a fluid diverter positioned therein.

DETAILED DESCRIPTION OF THE INVENTION

While the making and using of various embodiments of the present invention are discussed in detail below, it should be appreciated that the present invention provides many applicable inventive concepts, which can be embodied in a wide variety of specific contexts. The specific embodiments discussed herein are merely illustrative of specific ways to make and use the invention, and do not delimit the scope of the present invention.

The present invention provides improved methods and tools for completing and separately producing individual hydrocarbon zones in a single well. The methods can be performed in either vertical or horizontal wellbores. The term "vertical wellbore" is used herein to mean the portion of a wellbore in a producing zone, which is substantially vertical, inclined or deviated. The term "horizontal wellbore" is used herein to mean the portion of a wellbore in a producing zone, which is substantially horizontal. Since the present invention is applicable in vertical, horizontal and inclined wellbores, the terms "upper and lower" and "top and bottom" as used herein are relative terms and are intended to apply to the respective positions within a particular wellbore while the term "levels" is meant to refer to respective spaced positions along the wellbore. The term "zone" is used herein to refer to separate parts of the well designated for treatment and/or production and includes an entire hydrocarbon formation or separate portions of the same formation. As used herein, "down," "downward" or "downhole" refer to the direction in or along the wellbore from the wellhead toward the producing zone regardless of the wellbore's orientation toward the surface or away from the surface. Accordingly, the upper zone would be the first zone encountered by the wellbore and the lower zone would be located further along the wellbore. Tubing, tubular, casing, pipe liner and conduit are interchangeable terms used herein to refer to walled fluid conductors.

Referring initially to FIG. **1**, a multi zone isolation tool of the present invention is disposed within a cased wellbore that is generally designated **10**. Wellbore **10** is illustrated intersecting two separate hydrocarbon bearing zones, upper zone **12** and lower zone **14**. For purposes of description, only two zones are shown but it is understood that the present invention has application to isolate any number of zones within a well. As mentioned, while wellbore **10** is illustrated as a vertical cased well with two producing zones, the present invention is applicable to horizontal and inclined wellbores with more than two producing zones and in uncased wells.

A completion string disposed within wellbore **10** includes upper and lower sand screen assemblies **16**, **18** that are located proximate to zones **12**, **14**, respectively. Wellbore **10** includes a casing string **20** that has been perforated at locations **22**, **24** to provide fluid flow paths into casing **20** from zones **12**, **14**, respectively. The completion string includes production tubing **26**, packers **28**, **30** and a crossover sub **32** to enable fluid flow between the interior of the completion string and annulus **34**. The completion string also includes multi zone isolation tool **36** of the present invention. As explained in greater detail below, tool **36** functions to connect lower sand screen assembly **18** and production tubing **26** via a first flow path. Tool **36** also functions to selectively isolate and connect upper sand screen assembly **16** to annulus **34** via a second flow path. Thus, tool **36** selectively isolates zone **12** and zone **14** and allows zones **12**, **14** to be independently produced.

Referring next to FIGS. **2A-2D**, therein is depicted a more detailed illustration of an embodiment of a multi zone isolation tool of the present invention that is generally designated **100**. Tool **100** includes a substantially tubular outer housing assembly **102** that is formed from a plurality of housing members that are securably and sealingly coupled together by threading, set screws or similar technique. In the illustrated embodiment, housing assembly **102** includes an upper housing member **104**, a first upper intermediate housing member **106**, a second upper intermediate housing member **108** having a housing extension **110**, a housing coupling **112**, a sleeve housing member **114** that forms a substantially annular pocket **116** with housing extension **110**, a lower intermediate housing member **118**, a housing coupling **120** and a lower housing member **122**. It is to be understood by those skilled in the art that even though a particular arrangement of housing members is depicted and described, other arrangements of housing members are possible and are considered within the scope of the present invention.

Disposed within housing assembly **102** is an inner tubular assembly **124** that is formed from a plurality of tubular members that are securably and sealingly coupled together by threading, set screws or similar technique. In the illustrated embodiment, tubular assembly **124** includes an upper tubular member **126** having a polished bore receptacle **128**, a first upper intermediate tubular member **130** having a radially expanded region **132**, a second upper intermediate tubular member **134** having a lower shoulder **136**, a first intermediate tubular member **138**, a second intermediate tubular member **140**, a first lower intermediate tubular member **142** having a profile **144**, a second lower intermediate tubular member **146** and a lower tubular member **148**. It is to be understood by those skilled in the art that even though a particular arrangement of tubular members is depicted and described, other arrangements of tubular members are possible and are considered within the scope of the present invention.

Slidably disposed within tubular assembly **124** is a mandrel assembly **150** that is formed from a plurality of mandrel members that are securably and sealingly coupled together by threading, set screws or similar technique. In the illustrated embodiment, mandrel assembly **150** includes an upper mandrel member **152** including a profile **154** and a plurality of reclosing ports **156**, an intermediate mandrel member **158** that carries one or more lugs **160** and a lower mandrel member **162** including a plurality of opening ports **164**. It is to be understood by those skilled in the art that even though a particular arrangement of mandrel members is depicted and described, other arrangements of mandrel members are possible and are considered within the scope of the present invention.

Disposed between tubular assembly **124** and mandrel assembly **150** is a lug support sleeve **166** and a spring **168**. Together, lug support sleeve **166**, spring **168** and lugs **160** may be referred to as a lock assembly. Near their lower ends, tubular assembly **124** and mandrel assembly **150** define an actuation chamber **170** that is in fluid communication with opening ports **164** of mandrel assembly **150**. Together, tubular assembly **124** and mandrel assembly **150** define a central flow path **172** that extends between the upper and lower ends of tool **100**. As such, at least portions of mandrel assembly **150** may be considered as part of tubular assembly **124** in the section between tubular member **130** and tubular member **134**. As previously described with reference to FIG. **1**, central flow path **172** is in fluid communication with lower sand screen assembly **18** and therefore lower zone **14**.

Together, housing assembly **102** and tubular assembly **124** define a substantially annular flow path **174**. As previously described with reference to FIG. **1**, annular flow path **174** is in fluid communication with upper sand screen assembly **16** and therefore upper zone **12**. Disposed within annular flow path **174** is a sleeve **176** that has a plurality of seals **178** disposed on the inner surface thereof. In the illustrated embodiment, sleeve **176** is threadably coupled to a collet assembly **180**. Near its lower end, sleeve **176** is securably coupled to mandrel assembly **150** via a threaded connector held in position by a pin **182** that extends through one of three radially expanded sections of mandrel assembly **150** (only one being visible in the figures). Each of the radially expanded sections extends approximately thirty degrees in the circumferential direction such that the flow of fluid through annular flow path **174** is not prevented by the radially expanded sections. Also disposed within annular flow path **174** is an equalization pathway depicted as control line **184** that extends between tubular member **130** and tubular member **146**.

The operation of tool **100** will now be described with reference to FIGS. **2A-2D** and **3A-3D**. Tool **100** is initially run into the wellbore as part of the completion string with housing assembly **102** preferably forming a portion of the tubular string that extends to the surface. The completion string is the positioned at the desired location, such as that depicted in FIG. **1**. Initially, tool **100** is in its closed position as depicted in FIGS. **2A-2D** wherein sleeve **176** is in its lower position with seals **178** engaging an outer sealing surface of tubular member **130** such that fluid flow through annular flow path **174** is prevented. In this configuration, treatment or other operations requiring fluid flow and pressure fluctuations downhole of tool **100** are performed through central flow path **172**. Even though pressure fluctuations are occurring in central flow path **172** and are communicated to actuation chamber **170** and therefore to a lower piston area of mandrel assembly **150**, operation of tool **100** is prevented. Specifically, annular flow path **174** and central flow path **172** are in fluid communication with one another above tool **100**. In addition, the pressure in annular flow path **174** above sleeve **176** is communicated to an upper piston area of mandrel assembly **150** via control line **184** that serves as a pathway to equalize pressure across mandrel assembly **150**.

After treatment or other operations to the lower zone or zones are complete, the lower zones may be plugged off and a tubing string may be stabbed into polished bore receptacle **128** of tubular assembly **124**. In this configuration, annular flow path **174** and central flow path **172** are no longer in fluid communication with one another above tool **100**. Now, increased pressure within central flow path **172** is communicated to actuation chamber **170** via opening ports **164**. This pressure acts on the lower piston area of mandrel assembly **150** and urges mandrel assembly in the uphole direction. Mandrel assembly **150** is threadably coupled to sleeve **176** and sleeve **176** is threadably coupled to collet assembly **180**. As best seen in FIG. **2B**, collet assembly **180** selectively prevents upward movement of sleeve **176** and mandrel assembly **150** until the pressure exerted on the lower piston area of mandrel assembly **150** exceeds a predetermined value sufficient to radially inwardly retract the collet fingers of collet assembly **180**, to pass through a downwardly facing shoulder **186** of housing assembly **102**.

When the predetermined value is reached and the collet fingers of collet assembly **180** are radially retracted, sleeve **176** and mandrel **150** shift in the uphole direction to the position depicted in FIGS. **3**A-**3**D. As illustrated, collet assembly **180** reengages with housing assembly **102** in annular recess **188**. Sleeve **176** is in its upper position partially disposed within annular pocket **116** of housing assembly **102** with seals **178** engaging an outer sealing surface of housing extension **110**. In this configuration, fluid communication between annular flow path **174** and the upper zone is allowed, enabling, for example, production from the upper zone into annular flow path **174**. Importantly, in this configuration, seals **178** are protected from fluid flow or any abrasive materials therein as seals **178** are sealingly engaged with the outer sealing surface of housing extension **110** and out of the flow path. As such, seals **178** are not susceptible to damage during production from the upper zone or other fluid flow operations therethrough. Also, in this configuration, downhole movement of mandrel assembly **150** is prevented as spring **168** has urged lug support sleeve **166** under lugs **160** which are now aligned with and interfere with profile **144** of tubular member **142**, as best seen in FIG. **3**C.

Referring additionally to FIGS. **4**A-**4**D, if it is desired to return tool **100** from the open position to the closed position, a fluid diverter **190** may be run downhole on a conveyance that is depicted as wireline **192** and positioned within tool **100**. Fluid diverter **190** includes a latch assembly **194** that is operable to engage profile **154** of mandrel assembly **150**. Once engaged, a discharge port **196** of fluid diverter **190** is in fluid communication with reclosing ports **156** of mandrel assembly **150**. In this configuration, fluid pressure above seals **198** of fluid diverter **190** in central flow path **172** is routed to chamber **200**, which is in fluid communication with reclosing ports **156** via discharge port **196**. The fluid pressure then acts on a lower piston area of lug support sleeve **166** which compresses spring **168** and unprops lugs **160**, as best seen in FIG. **4**C.

The fluid pressure from chamber **200** now acts on an upper piston area of mandrel assembly **150** and urges mandrel assembly **150** downhole. As best seen in FIG. **4**B, collet assembly **180** selectively prevents downward movement of sleeve **176** and mandrel assembly **150** until the pressure exerted on the upper piston area of mandrel assembly **150** exceeds a predetermined value sufficient to radially inwardly retract the collet fingers of collet assembly **180**, to pass through an upwardly facing shoulder of annular recess **188** of housing assembly **102**. When the predetermined value is reached and the collet fingers of collet assembly **180** are radially retracted, sleeve **176** and mandrel **150** shift in the downhole direction to the position depicted in FIGS. **2**A-**2**D. As illustrated, collet assembly **180** is now repositioned below downwardly facing shoulder **186** of housing assembly **102**, thereby selectively preventing upward movement of sleeve **176** and mandrel assembly **150**. Sleeve **176** is now repositioned in its lower position with seals **178** engaging an outer sealing surface of tubular member **130**. In this configuration, fluid flow through annular flow path **174** is prevented and tool **100** has been returned to its closed configuration. The processes of opening and reclosing tool **100** can be repeated as required to enable independent and selective production from the upper and lower zones.

While this invention has been described with reference to illustrative embodiments, this description is not intended to be construed in a limiting sense. Various modifications and combinations of the illustrative embodiments as well as other embodiments of the invention will be apparent to persons skilled in the art upon reference to the description. It is, therefore, intended that the appended claims encompass any such modifications or embodiments.

What is claimed is:

1. An apparatus for isolating a first zone from a second zone in a subterranean wellbore, the apparatus comprising:
- an outer tubular and an inner tubular disposed within the outer tubular forming a substantially annular flow path therebetween that is in fluid communication with the first zone, the inner tubular defining a central flow path therein that is in fluid communication with the second zone;
- a sleeve having at least one seal disposed on an inner surface thereof, the sleeve positioned in the annular flow path to control fluid flow therethrough, the sleeve axially movable relative to the outer tubular and the inner tubular between a closed position wherein the seal engages an outer surface of the inner tubular and an open position wherein the seal engages an outer surface of the outer tubular; and
- a mandrel slidably disposed within the inner tubular and coupled to the sleeve, the mandrel operable to shift the sleeve between the open position and the closed position responsive to changes in pressure within the central flow path.

2. The apparatus as recited in claim **1** further comprising a collet assembly coupled to the sleeve, the collet assembly selectively preventing shifting of the sleeve relative to the outer tubular when the sleeve is in the open position and when the sleeve is in the closed position.

3. The apparatus as recited in claim **1** wherein the sleeve has a plurality of seals disposed on the inner surface thereof, the seals engaging the outer surface of the inner tubular in the closed position and the outer surface of the outer tubular in the open position.

4. The apparatus as recited in claim **1** wherein the outer tubular includes an extension that forms a substantially annular pocket, the extension forming the outer surface of the outer tubular that engages the at least one seal in the open position.

5. The apparatus as recited in claim **1** wherein the mandrel forms at least a portion of the inner tubular.

6. The apparatus as recited in claim **1** wherein the mandrel and the inner tubular define an actuation chamber operable to receive pressure from within the central flow path to bias the mandrel in a first direction relative to the inner tubular and shift the sleeve from the closed position to the open position.

7. The apparatus as recited in claim **6** further comprising a lock assembly positioned between the mandrel and the inner tubular, the lock assembly operable to selectively prevent movement of the mandrel in a second direction relative to the inner tubular when the sleeve is in the open position.

8. The apparatus as recited in claim **7** wherein the lock assembly further comprises a spring operated lug support and at least one lug, the lug support propping the lug radially outwardly to create interference with the inner tubular.

9. The apparatus as recited in claim **7** wherein the mandrel includes at least one reclosing port operable to receive pressure from within the central flow path when the sleeve is in the open position to release the lock assembly, bias the mandrel in the second direction relative to the inner tubular and shift the sleeve from the open position to the closed position.

10. The apparatus as recited in claim **1** further comprising an equalization pathway disposed within the annular flow path to selectively prevent operation of the sleeve from the closed position to the open position.

11. A method for isolating a first zone from a second zone in a subterranean wellbore, the method comprising:

disposing a multi zone isolation tool within the wellbore in a closed position, the tool including an inner tubular defining a central flow path and an outer tubular defining an annular flow path with the inner tubular, the annular flow path in fluid communication with the first zone, the central flow path in fluid communication with the second zone;

maintaining the tool in the closed position while treating the second zone by equalizing pressure in the central flow path and the annular flow path;

operably coupling a tubing string with the inner tubular;

varying the pressure in the central flow path;

biasing a mandrel slidably disposed within the inner tubular in a first direction; and

shifting a sleeve having at least one seal disposed on an inner surface thereof and coupled to the mandrel from the closed position wherein the seal engages an outer surface of the inner tubular to an open position wherein the seal engages an outer surface of the outer tubular.

12. The method as recited in claim **11** further comprising selectively preventing shifting of the sleeve when the sleeve is in the open position and when the sleeve is in the closed position with a collet assembly coupled to the sleeve.

13. The method as recited in claim **11** further comprising selectively preventing movement of the mandrel in the second direction when the sleeve is in the open position with a lock assembly positioned between the mandrel and the inner tubular.

14. The method as recited in claim **13** wherein selectively preventing movement of the mandrel in the second direction when the sleeve is in the open position further comprises propping a lug radially outwardly with a spring operated lug support to create interference with the inner tubular.

15. The method as recited in claim **13** further comprising:

aligning a fluid diverter with at least one reclosing port of the mandrel;

varying the pressure in the central flow path; and

releasing the lock assembly.

16. The method as recited in claim **15** further comprising biasing the mandrel in a second direction and shifting the sleeve from the open position to the closed position.

17. The method as recited in claim **11** wherein biasing the mandrel slidably disposed within the inner tubular in the first direction further comprises pressurizing an actuation chamber disposed between the mandrel and the inner tubular.

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